

Name of the Inventor: Karen B. Cooper  
Type of Application: Patent Application  
Title of the Invention SOUTH AMERICAN THORNLESS MESQUITE 'COOPER'

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ORIGIN OF THE NEW VARIETY:

10 The present invention relates to a new and distinct variety of South American Argentine ornamental mesquite known botanically as Prosopis Alba. The new variety will be name 'Cooper.' COOPER AMAZON is a Trade Mark applied to the variety to indicate the source of origin thereof.

15 The new variety was discovered by me in 1987 from a field of 600 Prosopis Alba trees planted in grow bags in a field at our nursery in Mesa, Arizona. Five of the field were noted as being thornless and were potted into 15 gallon containers. During 1990, the five thornless Prosopis Alba were moved to our nursery (Cooper's Wholesale Nursery) in Pima, Arizona and planted in a row running north and south, to the south of greenhouse #3. The designated Prosopis Alba mother tree #1 was planted at the north end of the row.

20 In 1992, I took 200 cuttings from Prosopis Alba mother tree #1, of which 6 rooted and grew. These 6 trees were planted in containers. Two years later in 1994, I took 100 cuttings from the best tree of the 6 trees that rooted and grew from the cuttings of 1992. From those cuttings, 5 rooted and grew. They were put in containers for further growth.

In 1997, I took 50 cuttings from the best tree of five trees that rooted and grew in 1994. From these cuttings, four trees grew. The source tree along with the four trees were placed in 20 gallon containers. All five trees were examined and found to exhibit the thornless characteristic of the Prosopis Alba mother tree #1.

5 From 1997 to 2000, the five Prosopis Alba clones grew and maintained the same characteristics of the Prosopis Alba mother #1. In 1999, seeds were gathered from the Prosopis Alba mother tree #1, planted and grown for root stock in preparation for budding using the five Prosopis Alba clones. In 2000, 250 root stock were budded using 50 buds from each of the five clones. The root stock was divided  
10 into five groups of 50 trees each. A 98 percent take in the buds was achieved.

The growth habit of the budded root stock was observed to be exceptionally vigorous, typically reaching a height of 10 cm in one week from the pop of the bud. After two weeks, an average of 20 to 25 cm of growth was recorded. This rapid growth habit continues until a height of about 102 cm is reached at which time  
15 branching begins to occur. The diameter of the trunk of the budded root stock trees was observed to increase at approximately the same rate as the increase in height. As a result, none of the young Prosopis Alba Cooper mesquite trees required staking. All of the 245 trees exhibited the same characteristics as the mother tree #1, including the lack of thorns.

20 In 2001, 500 trees were budded using the five Prosopis Alba clones plus one tree from each of the five groups of budded root stock. The growth habit for the 500 trees was the same as that exhibited by the group of 245 trees grown in year 2000. Due to the rapid growth of the young trees, none of the Prosopis Alba Cooper

mesquite required staking. All of the trees were thornless. This characteristic is in marked contrast to the common Prosopis Alba which has thorns up to 8 cm in length.

#### SUMMARY OF THE NEW VARIETY:

5           The tree of this new variety is unusual for the species in that it possess a rapid growth rate and matures to larger stature tree than any known thornless Prosopis Alba Argentine mesquite. Further, this new variety is thornless with no occurrence of thorns taking place over a period of sixteen years encompassing multiple generations of the Prosopis Alba Cooper mesquite.

10           The mature tree reaches a height of about 25 feet with a canopy of 40 feet and a trunk diameter of about 45 inches. Lack of water did not effect its growth habit. The new variety is characterized by large and numerous leaves. Thus, the new variety provides an excellent shade source with minimal care for the desert environment.

15           The total absence of thorns further enhances the attractiveness of this tree for use in populated areas.

          The new variety is hardy having experienced lengthy and hard freezes. Weather patterns having high winds including a tornado resulted only in a stripping of the leaves. No damage to the branches or trunk was noted. The Prosopis Alba  
20   Cooper has demonstrated exceptional strength in a wide range of adverse weather conditions.

### BRIEF DESCRIPTION OF THE DRAWINGS:

Fig. 1 is a color photograph of the 13 year old parent tree of the new variety;

Fig. 2 is a color photograph showing the branching of the new variety of tree;

Fig. 3 is a color photograph showing the distinctive pattern of the foliage of the  
5 parent tree and that of a fourth generation tree;

Fig. 4 is a color photograph displaying the structure of the leaves; and

Fig. 5 is a color photograph showing the bloom of the new variety.

### DESCRIPTION OF THE NEW VARIETY:

The following is a detailed description of my new variety of Prosopis Alba  
10 named Cooper. All color designations herein are made in accordance with the color  
chart of the Royal Horticultural Society.

Tree: At maturity, the tree height is about 8 m with a canopy of 13 m and a  
trunk diameter of 1.14 m. The Prosopis Alba Cooper mother tree #1 is 15 years old  
and received drip irrigation for the first three years. Thereafter no irrigation was  
15 provided. The lack of water did not alter its growth rate of about 1 m per year.

Bark: The bark on the trunk of the mature Prosopis Alba Cooper is rough, but  
not shaggy. The young terminal branches are smooth with a polished look. At about  
66 cm from the ground, the fissures on the trunk measure 7 mm wide. At 159 cm,  
the trunk fissures are 3 mm wide and disappear beyond that height.

20 The bark color is gray group 201-A for the trunk and branches of at least 5 cm  
in diameter. The color of smaller diameter terminal branches is greyed-orange group  
175-A.

Thorns: The *Prosopis Alba* Cooper has been found to be completely thornless from the mother tree #1 through three generations of asexual reproduction by cuttings followed by cloning via budding from the third generation. No thorns appeared at any stage of growth, nor did any develop into maturity.

5           Foliage: All generations of the new variety exhibit the same foliage pattern with an average of five petioles coming from the node of the branch, with one pair of pinnae per each petiole. The petioles are 4 to 4.5 cm long and the individual pinnae is 13-15 cm long.

10           Each pinnae has an average of 18 pairs of leaflets with a spacing of about 1.5 cm therebetween. Each leaflet is about 2.75 cm long and 2 mm wide.

          The terminal branches have about 43 pairs of leaflets in a distance of 55 cm, with an average of 5 to 5.5 cm between the internodes. The color of the leaves is group yellow-green 147-B.

15           Flowering: The bloom of the new variety is typically 6.5 to 7.5 cm in length and 1.25 cm wide. The color of the bloom is group yellow-orange 21-C.

          The seed pods average 13-16 cm long, 2 cm wide and 2 mm thick. Mature seed pods that have fallen from the tree have a curved shape and color of group greyed-yellow 161-B. The number of seed per pod is 18 to 24. The seeds are 8 mm long and 5 mm wide with a color of group greyed-orange 164 B.

20           Disease Resistant: In 1990, the mother tree #1 and the four other thornless mesquites were planted in soil where cotton had been grown and which contained cotton root rot (*Phymatotrichum Omnivorum*). The trees were unaffected by the root

rot in the soil. No stem cankers have ever been observed on the mother tree #1 or any of the clone trees.

Cold Hardiness: After experiencing an extremely hard freeze of a 16° F low and a 36 ° F high for five consecutive days, the mother tree #1 sustained no trunk damage and retained 50 percent of the leaves. Similar weather patterns of freezing occurred during the period of 1992 through 1999 with no damage to the branches or trunk of the trees of this new variety.

In July of 2003, a hail storm with winds of 60 mph for a period of one hour took place and over 400 trees of this new variety were exposed. No apparent damage was sustained. The height of the trees in containers at that time was 102 to 122 cm. The strength of the Prosopis Alba Cooper variety under severe weather considerations is notable.